

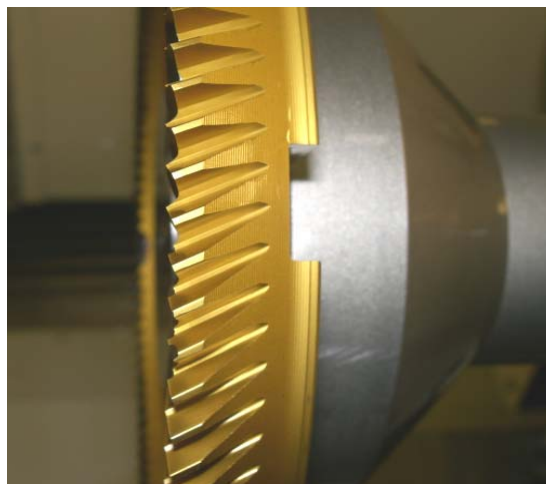
Step Cutter resharpening

A12-212






Step cutters are used for gear production in shaving process. The cutter can be used for inside gear shaving, as well as for outside shaving of big gears.

Step cutters can be sharpened using a cup, straight 1A1 or V-shape wheel with corresponding angle. Usage of cup wheel is limited to cutter size due to interference with the opposite tooth group.

The given example is a shaper cutter with Ø155mm, 71 teeth and 16mm tooth height. Ground with a 1A1-CBN wheel.



1. Cycletime for Production

Tool specifications					
Diameter 155 mm, 71 teeth, tooth height 15 mm					
Material HSS					
Operations					
Feed [mm/Min]	2000	300	450	150	300
Infeed / pass [mm]		0.005	0.050	0.005	0.000
Wheel speed [m/s]		33	33	33	33
Used wheels					
Grinding time [min]	1.0	1.5	78.0	1.5	18.0
Total cycle time	~ 100 min				

The mentioned cycle times are indicative. The material to be ground, different grinding wheels or other coolants can influence the cycle times considerably.

There are 3 types of indexing available:
Forward, backward
or come together

Total material removal
= $4 \times 0.05 \text{ mm} = 0.2 \text{ mm}$

2. Used Grinding Wheels

1A1 90° vitrified CBN Ø50 B91



3. Machine and Software Requirements

Machines: 5 axes CNC grinder: Corvus GDS / Gemini DMR
Control: Fanuc 160i / 310i
Coolant: Synthetic Oil, pressure 6 bar
Software: Quinto 5.1.0 or higher

responsible engineer: SIW, 08.2010

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